

# Air Travel Demand Through 2025:

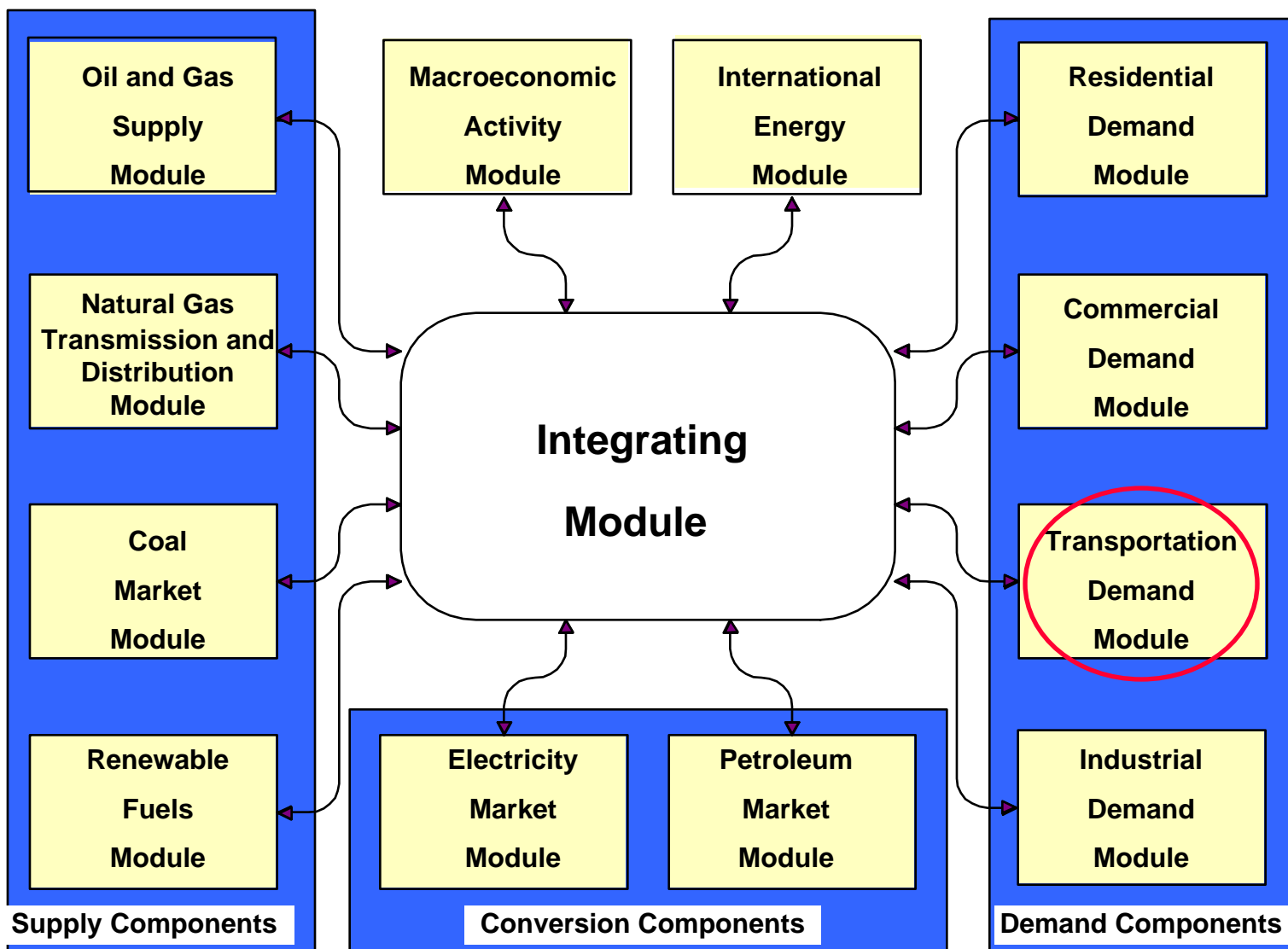
## Recovery and Factors Influencing Long-term Growth

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# Introduction

- National Energy Modeling System (NEMS) Overview
- Factors Influencing Air-Travel demand
  - Population and Economic Growth
  - Fuel Prices and Aircraft Efficiency
  - Constraints
- Air-Travel Projections Through 2025
- Conclusions

# National Energy Modeling System



# Factors Influencing Air Travel Demand

- Macroeconomic Factors
  - GDP
  - Disposable Personal Income
  - Merchandise Exports
- Other Factors
  - Jet Fuel Prices
  - Energy Efficiency
  - Ticket Price
  - Infrastructure Constraints (airspace, runways, etc)
- Other Factors Not Modeled
  - Consumer Behavior
  - Electronic Communication/Teleconferencing

# Estimating Air Travel Demand

- Air Travel Module Forecasts:
  - Yield (Revenue/Passenger)
  - Revenue Passenger-Miles (RPM)
    - Domestic (Personal, Business)
    - International
  - Revenue Ton-Miles (RTM)
  - Total Seat-Miles

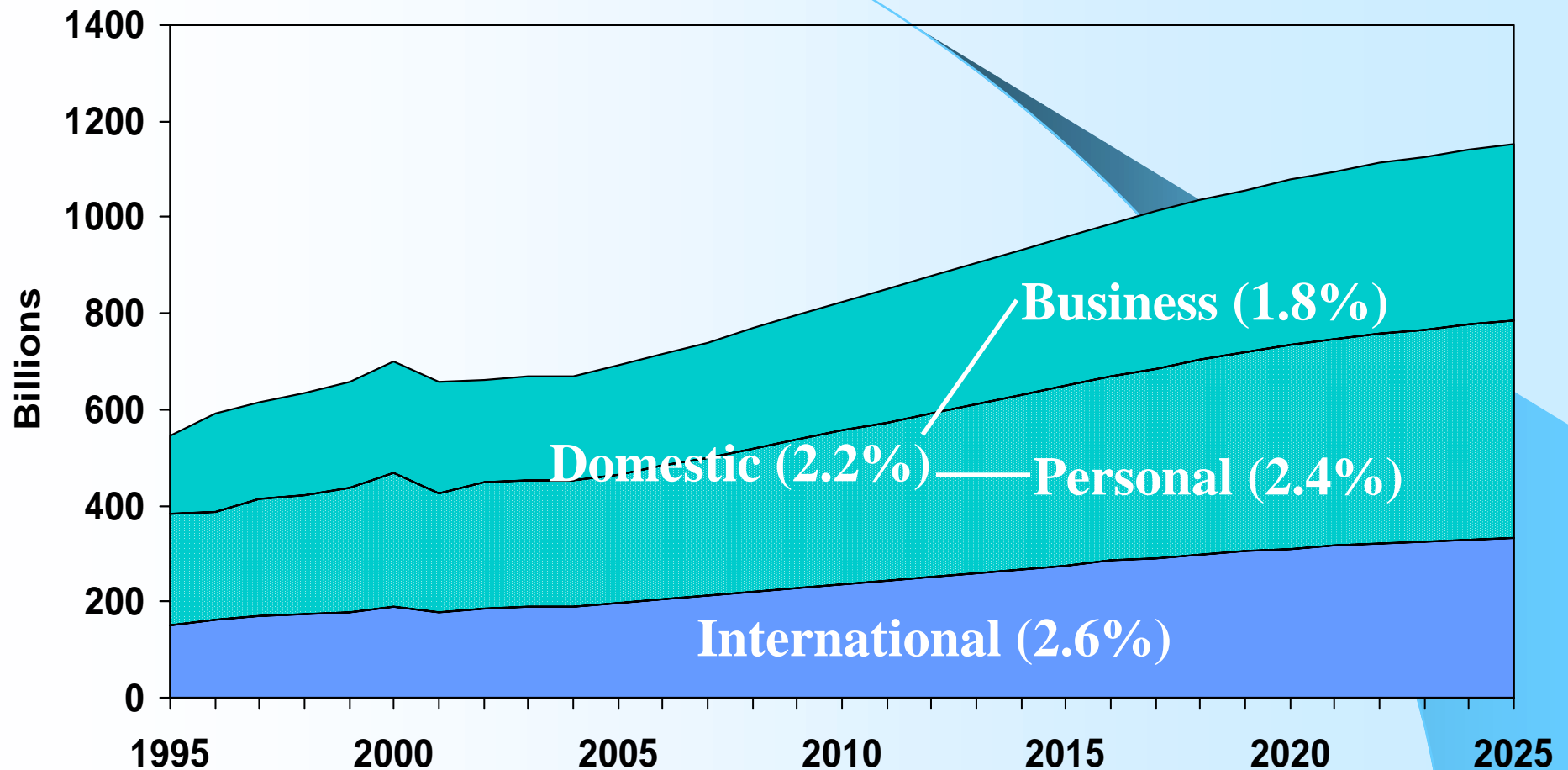
# Factors Influencing Energy Efficiency

- Load Factors
- Technologies
  - Ultra-High Bypass Engines
  - Thermodynamics
  - Advanced Aerodynamics
  - Weight-reducing Materials
- Aircraft Sales, Stocks and Retirement Rates

# Capacity Constraints

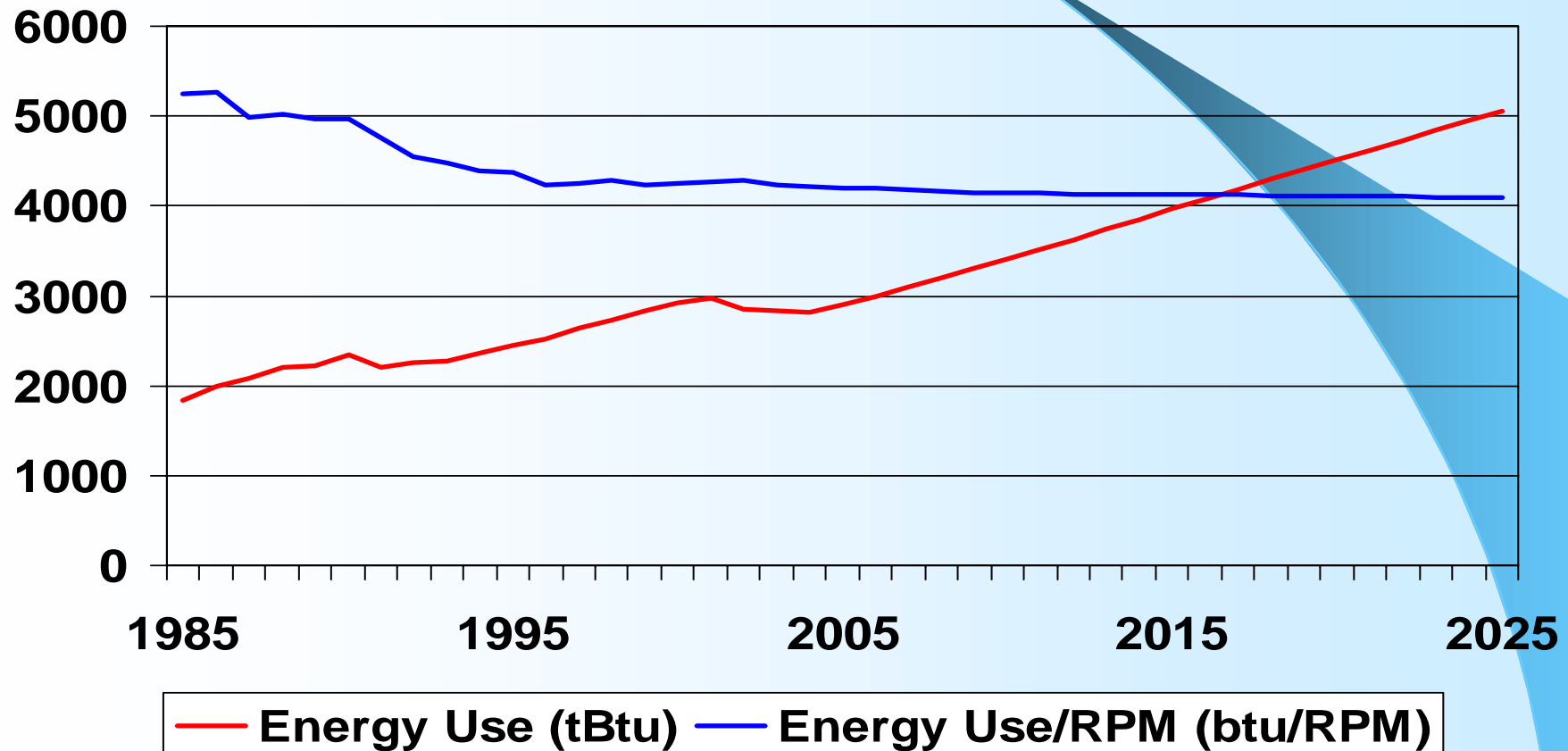
- Capacity definition
- Plans to Expand Capacity
- Data for Individual Airports aggregated to develop Capacity Constraint

# Projected Revenue Passenger Miles





# Energy Use and Energy Efficiency



# Uncertainties Influencing Future Demand

- Airline Restructuring
- Economic Growth and Timing of Recovery
- Technological/Operational Efficiency
- Increased Use of Regional Jets
- Security Costs and Measures
- Potential Consequence of a War Against Iraq

# Model Enhancements for AEO '04

- Analyze Growth in Market Segments
- Re-examine Technology Attributes and Investigate Future Technologies
- Impacts of Proposed Legislation  
(Regulating Aircraft Noise and Emissions)

# Conclusion

- Air Travel Is a Major Area of Growth in Long-Term Transportation Energy Demand
- Recovery of Air-Travel Demand Expected in 2005 or 2006
- Airport Congestion Will Again Be a Factor Following Recovery